What is claimed is:

1. A method for gray level dynamic switching, applied to a display with a pixel, comprising the following steps:

providing a gray level sequence SG, wherein SG sequentially represents two or more desired gray levels Go(1),…,Go(T) of the pixel at consecutive time frames 1,…,T and comprises a current gray level Go(t) and a previous gray level Go(t-1) corresponding to time frames t and t-1, respectively, and Go(t) corresponds to a driving voltage Vo(t) to present Go(t) under a static condition; and

determining an optimized driving voltage Vd(t), according to an equation $Vd(t) = V_o(t-1) + ODV$, wherein the ODV is a minimum voltage capable of obtaining one gray level transition in a determined response time;

determining an dynamic gray level data $G_d(t)$ according to an equation $Vd(t) = a \times Gd(t)^3 + b \times Gd(t)^2 + c \times Gd(t) + d$;

producing the optimized driving voltage Vd(t) according to the dynamic gray level data $G_d(t)$;

driving the pixel with optimized driving voltage Vd(t) to change the forward pixel to a state corresponding to $G_o(t)$.

2. The method as claimed in claim 1, wherein a is -0.0004, b is 0.0037, c is -0.1443, and d is 8.6992.

3. The method as claimed in claim 1, wherein, in positive frame, the polarity of the voltage ODV is positive when $G_o(n) > G_o(n-1)$ and negative when $G_o(n) < G_o(n-1)$.

4. The method as claimed in claim 1, wherein, in negative frame, the polarity of the voltage ODV is negative when $G_o(n) > G_o(n-1)$ and positive when $G_o(n) < G_o(n-1)$.

5. The method as claimed in claim 1, wherein the display is a liquid crystal display.

6. The method as claimed in claim 1, further comprising a step of adjusting the voltage ODV according to an operating temperature.

7. The method as claimed in claim 6, wherein the voltage ODV is inversely proportional to the operating temperature.

8. An apparatus for gray level dynamic switching, applied to drive a display with a pixel, comprising:

a memory set for storing a previous gray level $G_o(t-1)$, $G_o(t-1)$ representing the desired gray level of the pixel at time frame t-1, and $G_o(t-1)$ corresponding to a driving voltage $V_o(t-1)$ to present $G_o(t-1)$ under a static condition;

a processor for determining an optimized driving voltage Vd(t) according to a current gray level $G_o(t)$ and an equation $Vd(t) = V_o(t-1) + ODV$, and determining an dynamic gray level data $G_d(t)$ according to an equation $Vd(t) = a \times G_d(t)^3 + b \times G_d(t)^2 + c \times G_d(t) + d$, wherein Go(t) represents the desired level of the

pixel at time frame t, the voltage ODV is a minimum voltage capable of obtaining one gray level transition in a determined response time, a is -0.0004, b is 0.0037, c is -0.1443, and d is 8.6992; and

a driving circuit for receiving $G_d(t)$ and correspondingly generating the optimized driving voltage Vd(t) to drive the pixel to change the forward pixel to a current state corresponding to $G_o(t)$.

9. The apparatus as claimed in claim 8, wherein, in positive frame, the polarity of the voltage ODV is positive when $G_o(t) > G_o(t-1)$ and negative when $G_o(t) < G_o(t-1)$.

10. The apparatus as claimed in claim 8, wherein, in negative frame, the polarity of the voltage ODV is negative when $G_o(t) > G_o(t-1)$ and positive when $G_o(t) < G_o(t-1)$.

11. The apparatus as claimed in claim 8, wherein the processor further adjusts $G_d(t)$ according to an operating temperature.

12. The apparatus as claimed in claim 11, wherein the voltage ODV is inversely proportional to the operating temperature.

13. The apparatus as claimed in claim 8, wherein the memory set is a set of dynamic random access memories (DRAM).

14. A display system, comprising:

a display, having at least one pixel;

a memory for storing a program;

a processor for executing, according to a program in the memory, the following steps:

receiving an original gray level sequence S_o consisting of two or more original gray levels $G_o(1),\ldots,G_o(T)$, wherein a current gray level $G_o(t)$ and a previous gray level $G_o(t-1)$ correspond to time frames t and t-1, respectively, and $G_o(t-1)$ corresponds to a driving voltage $V_o(t-1)$ to present $G_o(t-1)$ under a static condition;

transforming S_o to an adjusted gray level sequence S_d consisting of two or more adjusted gray levels $G_d(1),\ldots,G_d(M)$, an adjusted gray level $G_d(m)$ being generated according to a relevant sub-sequence comprising $G_o(t-1)$ and $G_o(t)$, wherein an optimized driving voltage $Vd(t)$ is determined according to the $G_o(t)$ and an equation $Vd(t) = V_o(t-1) + ODV$, and the adjusted gray level $G_d(m)$ is determined according to an equation $Vd(t) = a \times G_d(m)^3 + b \times G_d(m)^2 + c \times G_d(m) + d$, wherein the voltage ODV is a minimum voltage capable of obtaining one gray level transition in a determined response time, a is -0.0004, b is 0.0037, c is -0.1443, and d is 8.6992; and

sequentially driving the pixel with driving forces corresponding to $G_d(1),\ldots,G_d(M)$ in S_d.

15. The system as claimed in claim 14, wherein, in positive frame, the polarity of the voltage ODV is positive when $G_o(t) > G_o(t-1)$ and negative when $G_o(t) < G_o(t-1)$.

16. The system as claimed in claim 14, wherein, in negative frame, the polarity of the voltage ODV is negative when $G_o(t) > G_o(t-1)$ and positive when $G_o(t) < G_o(t-1)$.

17. The system as claimed in claim 14, wherein the program in the memory adjusts the $G_d(m)$ according to an operating temperature.

18. The system as claimed in claim 17, wherein the voltage ODV is inversely proportional to the operating temperature.